

IN THE CLAIMS

1. (Amended) A device, comprising:

a switch housing;

5 at least two terminals that are both mutually electrically isolated and electrically isolated from the housing;

a positive action thermal switch ~~having being~~ electrically coupled to at least two of the mutually electrically isolated terminals and being electrically isolated from the housing; and

10 an integral electrical temperature sensor ~~integral with the positive action thermal switch being electrically coupled to at least two of the mutually electrically isolated terminals and being electrically isolated from the housing,~~ the integral electrical temperature sensor sharing one or more ~~common~~ of the two mutually electrically isolated terminals in common with the positive action thermal switch.

12. (Amended) ~~The device of claim 2 wherein~~ A device, comprising:

a switch housing;

15 ~~the snap-action thermal switch is structured having at least four terminals being that are mutually electrically isolated,~~ from the housing;

a first two of the at least four terminals being shorted together when electrical contacts of a positive action thermal switch mounted on the two terminals are closed; and

20 ~~the an~~ an integral electrical temperature sensor ~~is being~~ electrically ~~being~~ coupled between a second different two of the electrically isolated terminals.

13. (Amended) A multiple output thermal detection and protection device, comprising:

25 a two-terminal snap-action thermal switch structured in a normally open configuration and having a thermally activated snap-action portion that is electrically coupled between two mutually electrically isolated terminals that are both electrically isolated from a housing containing the snap-action portion; and

an electrical temperature sensor that is both thermally and electrically coupled to the snap-action thermal switch.

22. (Amended) The device of claim 20 wherein the integral electrical temperature sensor is a ~~model AD590~~ flat package, two-terminal temperature transducer microchip available commercially from Analog Devices, Norwood, MA (~~vendor CAGE number 24355~~).

23. (Amended) ~~The device of claim 13 wherein the~~ A multiple output thermal detection
5 and protection device, comprising:

A3
a two-terminal snap-action thermal switch ~~includes~~ structured in a normally open configuration and having a thermally activated snap-action portion that is electrically coupled between first and second mutually electrically isolated terminals that are both electrically isolated from a housing containing the snap-action portion, the first and second electrical terminals that are
10 being mutually electrically isolated when the snap-action thermal switch structured in the normally open configuration; and

~~further comprising a third and fourth electrical terminals that are mutually electrically isolated from the first and second electrical terminals of the two-terminal snap-action thermal switch; and~~

15 ~~wherein an electrical temperature sensor that is thermally coupled to the snap-action thermal switch and having first and second terminals of the integral electrical temperature sensor that are electrically coupled respectively to the third and fourth electrical terminals.~~

32. (Amended) ~~The device of claim 26~~ A multiple output thermal detection and protection device, comprising:

A4
20 first and second terminals extending through a substantially planar header and being electrically isolated therefrom;

a first stationary contact adjacent to one end of the first terminal;

a second contact adjacent to one end of the second terminal and being movable between a first position spaced away from the first stationary contact in an open circuit structure and a
25 second position in contact with the first stationary contact in a closed circuit structure;

an upright tubular spacer projecting from the header and surrounding the first and second contacts and the portions of the first and second terminals adjacent to the contacts;

a housing enclosing the spacer, the first and second contacts, and the portions of the first and second terminals adjacent to the contacts, the housing extending beyond the spacer and cooperating with the spacer to form an annular space therebetween spaced away from the contacts;

5 a bi-metallic disc actuator being structured to change state at a preselected sensed temperature and being captured within the annular space and being responsive to a sensed temperature to change state between a concave and a convex relationship to the electrical contacts, such that the disc actuator spaces the movable contact away from the stationary contact when in the concave relationship and the disc actuator permits the movable contact to contact the
10 stationary contact when in the convex relationship, wherein the disc actuator is structured to be in one of the concave and convex relationships to the electrical contacts when the sensed temperature is below the ~~predetermined~~-preselected sensed temperature;

a third terminal and a fourth terminal extend through the header and each being electrically isolated therefrom; and

15 ~~the~~-an electrical temperature sensor is coupled to the third and fourth terminals in an independent circuit from the electrical contacts actuated by the disc actuator and being structured to provide to provide an independent output representative of the sensed temperature thereon.

42. (Amended) A method for providing thermal detection and protection in a single device, the method comprising:

20 sensing temperature with an electrical temperature sensor portion of a first circuit that is electrically isolated from a housing supporting the first circuit;

outputting on the first circuit a first signal representative of the sensed temperature;

sensing a predetermined set point temperature; and

25 ~~positively closing a second circuit~~ in response to sensing the predetermined set point temperature, positively closing a second circuit that is electrically isolated from the housing which also supports the second circuit and outputting on at least one common terminal with the first circuit a second signal representative of the sensed set point temperature.